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## AN ENTERPRISE COST STUDY IN KENTUCKY.<sup>1</sup>

W. D. NICHOLLS,

COLLEGE OF AGRICULTURE, LEXINGTON, KENTUCKY.

In the early spring of the present year, the Kentucky Agricultural Experiment Station and the Office of Farm Management, U. S. D. A. coöperating, began an investigation of the cost of producing tobacco, the object in mind being to ascertain the quantitative units of labor and materials used in the production of the crop, also the total cost in dollars and the correct relation of the crop to other farm enterprises. Two routes were laid out, one in the Burley District with Mr. W. R. Gabbert as field man, the other in the Dark Tobacco District with Mr. J. B. Hutson in charge. Mr. F. W. Peck is in general charge for the Office of Farm Management and the writer for the Kentucky College of Agriculture. Each of the field men has an automobile, for the use of which he is remunerated on a mileage basis, and each covers his entire route once a week, visiting the farmers with whom arrangements have been made to make daily records of expenditures of labor, materials and cash for the tobacco crop. On these weekly visits the route man checks the records carefully to insure their accuracy.

Both the route men are native Kentuckians and were brought up in the tobacco field. Both are graduates of the college of agriculture of the University of Kentucky. That they have been able to retain the good will and continued coöperation of the farmers is evidenced by the fact that out of 170 coöperators with whom the work was started all but seven have continued to the present time, 163 records having been kept up to date.

In selecting the coöperators no effort was made to get the most successful growers but rather to have them fairly representative of the general average. Special record sheets bound in tablet form with spaces for recording the hours of man, horse, boy or woman labor and for cash expenditures were left with each coöperator. Any winter plowing or other work already done or any expenditures already made were recorded and subsequent expenditures entered

<sup>1</sup> Paper read at the tenth annual meeting of the American Farm Economic Association, Chicago, Illinois, November 13, 1919.

daily by the coöperator or some member of his family and checked by the field man on his weekly visit to the farm. A given set of farms located on a given road are visited the same day each week and as far as possible at about the same hour of the day so that the coöperator knows about when the field man will be at his place. Usually about half the coöperators on any day's route are visited in the forenoon, the field man eating his dinner at the end of the route farthest from headquarters, visiting the remaining coöperators in the afternoon. From 12 to 15 coöperators are visited daily, this being possible because of the excellent hard surfaced roads in both the districts. The accuracy of the farmer's figures or possible omissions are checked by engaging him in conversation relative to the farm operations of the preceding week. After three or four visits the field man learned which of the coöperators required the special supervision and accordingly checked the entries of these men with special care.

Inventories were taken on the farms of the coöperators in the early part of the year with the expectation of securing a labor income record of each coöperator for the current year. The land planted to tobacco on each farm was carefully measured and the acreage determined.

For a better understanding of the economic conditions surrounding the production of tobacco a brief review of the history and operations connected with the production of the crop will be helpful. Tobacco production in Kentucky antedates the advent of the white man. Marquette and La Salle found the plant being cultivated by the Indians in the Mississippi and Ohio Valleys as early as 1669. In 1775 white settlers introduced the crop and cultural methods from North Carolina and Virginia. Since that early date the crop has steadily increased in economic importance. The acreage has more than doubled in the past thirty years. At present the crop equals nearly one third the value of all crops produced within the state. In 1917 it brought the growers more than 98 million dollars; in 1918, more than 130 millions, while there is every indication that the current year's crop will bring as much or more than that of 1918. The production of tobacco in the United States in 1918 was in round numbers  $1\frac{1}{4}$  billion pounds or about one half of the world's supply. Of this Kentucky produced 427,500,000 pounds which is about one third of the production of the United States and one sixth of the world's production.

The period from 1900 to 1907 witnessed a serious depression in

the tobacco-growing industry. Producers received an average of about seven cents per pound during that time. It was claimed that this was less than the cost of production and that it meant starvation wages for the tobacco tenant and bankruptcy for the land owner. Responsibility for the low price was attributed by the growers to the tobacco trust which by absorbing the independent manufacturers had eliminated competition in buying the crop. As a result, growers' protective associations and pools were formed for the purpose of securing better prices. Great excitement and bitterness was engendered and the entire tobacco growing area in Kentucky was plunged into a condition of turbulence marked by the burning of tobacco warehouses, the scraping of plant beds, the coercion of non-members of the association, and other acts of violence. The lawless element which was responsible for these outrages constituted a small minority of the organized growers, yet these gained for the state much unfavorable publicity throughout the country.

Following this period of disturbance came a considerable advance in tobacco prices, with an increased interest among farmers in the growing of the crop. In 1917 growers received an average of 20 cents per pound; in 1918, nearly 23 cents; and in 1919 about 30 cents. In the Central Kentucky Burley district the price has advanced 200 to 300 percent in the past ten years. Many crops during the past two years have brought as much as \$1000 per acre and in some cases \$1500. One 50-acre crop of Burley tobacco in Scott County, a few days ago, was sold for 85 cents per pound, or more than \$60,000 for the 50 acres.

As would be expected these high prices for tobacco have resulted in a marked increase in land values. In central Kentucky where the advance in the price of tobacco has been most marked there has been the most rapid advance in the price of land, in many cases more than doubling in sale value in the past three years. Hundreds of large farms have been subdivided and sold, in many cases to tobacco tenants and small farmers who have been able to realize from the sale of high-priced tobacco sufficient money to make a substantial first payment on the land purchased. In numerous cases small tracts purchased by men of this class two or three years ago have already been paid for from the proceeds of the sales of the tobacco crop. These conditions are tending to bring about a change in the extensive or grazing type of farming which heretofore prevailed, to an intensive system in which a larger area is devoted to the tobacco crop.

There is an element of serious danger in this rapid increase in land

prices for the reason that only a limited amount of land on the average farm is first-class tobacco land, yet the entire farm acreage has tended to advance proportionately. Furthermore, the average farm is equipped with barn room for housing tobacco grown on not more than one tenth to one fifteenth of the total farm area. New barns must therefore be built if the tobacco acreage is increased and these cost from \$250 to \$400 per acre capacity.

Broadly speaking, the tobacco growing area of Kentucky may be divided into two principal districts. The first of these is the central Kentucky district producing the so-called Burley—an air-cured tobacco used chiefly in the production of chewing tobacco and plug cut smoking tobaccos, such as the Prince Albert, Tuxedo, Velvet and similar brands. The other district occupies the southwestern and western part of the state and produces the so-called Dark Tobacco, the greater part of which is fire-cured and is sold largely to foreign buyers for export to England, Germany, France, Italy and Spain. In a part of the area of the Dark Tobacco district (the so-called Green River district) the crop is air-cured. Otherwise the methods of cultivation and handling, and the varieties grown are similar to those of the remainder of the Dark Tobacco District.

*Burley Route.*—Lexington is route headquarters for the Burley cost studies, being in the center of the rich phosphatic limestone area which has the most fertile soil in the state. Records are being kept on 56 farms within a radius of 15 miles of Lexington. In order to get cost figures on the poorer soils of the Burley district this route was extended into northern Scott County, a region of thin and hilly land. Two days a week are spent in visiting the 30 coöperators in that section. There are 86 coöperators in the Burley district.

The price of land in the Burley district ranges from \$150 to \$600 an acre in the eight or ten counties of the Bluegrass Region proper and from \$100 to \$300 an acre in the twenty-five or thirty Burley counties bordering the best central Kentucky Bluegrass counties. Much the greater part of the tobacco crop in the central Burley counties is raised by share tenants, while a considerable proportion of the crop in the poorer outlying counties is produced by the farm operator with the help of his family or hired labor.

*Dark Tobacco District.*—The cost studies for dark tobacco are being carried on in Christian County, Hopkinsville, the county seat, being the headquarters of the field man. The work in this county is laid out on six of the principal roads, two of which extend into the

fertile section of the southern part of the county, two into the thinner soil area of the northern part and two into areas that border and connect the typically northern and southern sections.

In southern Christian County the farms range from 150 to 500 acres in size. Most of the soil consists of yellowish brown to brown, yellow, silt loam underlaid by a silty clay sub-soil of reddish-brown color. This soil has limestone foundation. The land in this section sells from \$125 to \$200 per acre. The most common rotation here is corn or tobacco one year, wheat one or two years, and clover one year. About 10 percent of the total farm area is cropped in tobacco. Farmers have secured as much as 2000 pounds per acre on this land but the average yield is less than 1000 pounds per acre. Practically all the labor is done by negroes, about one half being wage labor and one half share labor.

In northern Christian County the farms range from 50 to 200 acres in size, the soil is less fertile, being a gray to pale yellow silt loam with a yellow silty-clay subsoil. This soil is of sandstone foundation. The land sells for from \$25 to \$75 per acre. There is no regular rotation system in this section, the most fertile spots being used for tobacco. Most of the labor is done by the farm owner and his family. A much larger proportion of the crop acreage is in tobacco in this section than in southern Christian County. Practically no crops are sold in northern Christian County except tobacco.

The tobacco crop entails a large amount of labor and is subject to considerable risk and to unusual price fluctuations. A study of the economics of the crop is needed not only to work out the most economical handling of the crop but also to show to what extent the available acreage and labor of the individual farm should be devoted to the crop, and what other crops and live stock enterprises fit in most profitably with the tobacco crop. In past years it has been claimed by some farmers that the raising of tobacco is an unmitigated evil, causing the farmer to permit the weeds to grow along the fence lines and in the corn fields, that the crop depletes soil fertility and keeps the children out of school to help in its cultivation and handling. Some farmers have carried the crop to the point of neglecting and sometimes even excluding all other enterprises. This study will show at what point between these two extremes lies a rational and profitable system. The experience of the most successful farmers indicates that the growing of tobacco in reasonable acreage and in a proper rotation does not deplete soil fertility, that in fact, considerably better

yields of wheat, clover and grass are obtained after tobacco than after corn, and that best profits are obtained by combining the proper acreage of tobacco, feed and forage crops, with the correct number and kind of livestock.

The work in this tobacco study is being continued and final figures for the year's work should be available by the early spring of the coming year.

**REPORT OF COMMITTEE ON COST INVESTIGATIONS.  
TENTH ANNUAL MEETING, AMERICAN FARM ECONOMIC  
ASSOCIATION.**

In February, 1919, the Secretary of Agriculture called together a committee "To Consider Plan of Organization, Scope of Work, and Projects for the Office of Farm Management, and Methods of Procedure in Making Cost of Production Studies." The recommendations of this committee were published in Circular 132 of the Office of the Secretary, United States Department of Agriculture.

The members of the above committee were all members of the committee on cost investigations, except Mr. E. H. Thomson, who was at that time Acting Chief of the Office of Farm Management. Your committee recommends the method of procedure for cost of production studies as given in Circular 132, Office of the Secretary, U. S. D. A., and suggests that these methods be used by members of this association.

G. F. WARREN, *Chairman.*